FACT SHEET FOR STATE WASTE DISCHARGE PERMIT ST 6185
TOYOCOM DEVICES OF AMERICA, INC.

SUMMARY

This is a new permit for a recently constructed facility. Although currently shut down, Toyocom expects to restart this synthetic quartz manufacturing facility.

Issuance Date: July 31, 2002

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INTRODUCTION

This fact sheet is a companion document to the draft State Waste Discharge Permit No. ST 6185. The Department of Ecology (the Department) is proposing to issue this permit, which will allow discharge of wastewater to the Cowlitz Water Pollution Control Plant (CWPC). This fact sheet explains the nature of the proposed discharge, the Department's decisions on limiting the pollutants in the wastewater, and the regulatory and technical bases for those decisions.

Washington State law (RCW 90.48.080 and 90.48.160) requires that a permit be issued before discharge of wastewater to waters of the state is allowed. This statute includes commercial or industrial discharges to sewerage systems operated by municipalities or public entities which discharge into public waters of the state. Regulations adopted by the state include procedures for issuing permits and establish requirements to be included in the permit (Chapter 173-216 WAC).

This fact sheet and draft permit are available for review by interested persons as described in Appendix A- Public Involvement Information.

The fact sheet and draft permit have been reviewed by the Permitee. Errors and omissions identified in these reviews have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Changes to the permit will be addressed in Appendix D- Response to Comments.

GENERAL INFORMATION	
Applicant	Toyocom Devices of America, Inc.
Facility Name and Address	Toyocom Devices of America, Inc. 1850 Prudential Blvd. Longview, WA 98632
Type of Facility	Production of Synthetic Quartz Crystals (SIC 3679)
Facility Discharge Location	Latitude: 46° 08' 53" N Longitude: 122° 59' 13" W.
Treatment Plant Receiving Discharge	Cowlitz Water Pollution Control Plant
Contact at Facility	Lindsey Unruh, Production Team Leader (360)577-8900
Responsible Official	Takeshi Ogawa, Plant Manager 1850 Prudential Blvd., Longview, WA 98632 (360)577-8900, fax (360)577-8111

BACKGROUND INFORMATION

DESCRIPTION OF THE FACILITY

This is a new facility that is subject to categorical pretreatment standards. The principal business activity is the production of synthetic quartz crystals. This activity is categorized under Standard Industrial Code (SIC) 3679 *Electronic Components*, which includes *Quartz crystals for electronic application*. Further, the Electronic Crystals Subcategory of 40 CFR Part 469 includes effluent limitations and monitoring requirements for the manufacture of electronic crystals. Therefore, in accordance with WAC 173-216-050(2), this facility is required to have a permit to discharge wastewater. Toyocom does not meet the definition of a significant industrial user.

HISTORY

The facility began operation on May 25, 2001. Initially, the facility had four operational autoclaves. Four more have been added, but are not complete and are not yet operational. The facility shut down temporarily on January 31, 2002, citing a general downturn in the electronic communications field and the Japanese economy. The company is planning to restart the facility in the future, perhaps as early as Fall 2002.

INDUSTRIAL PROCESSES

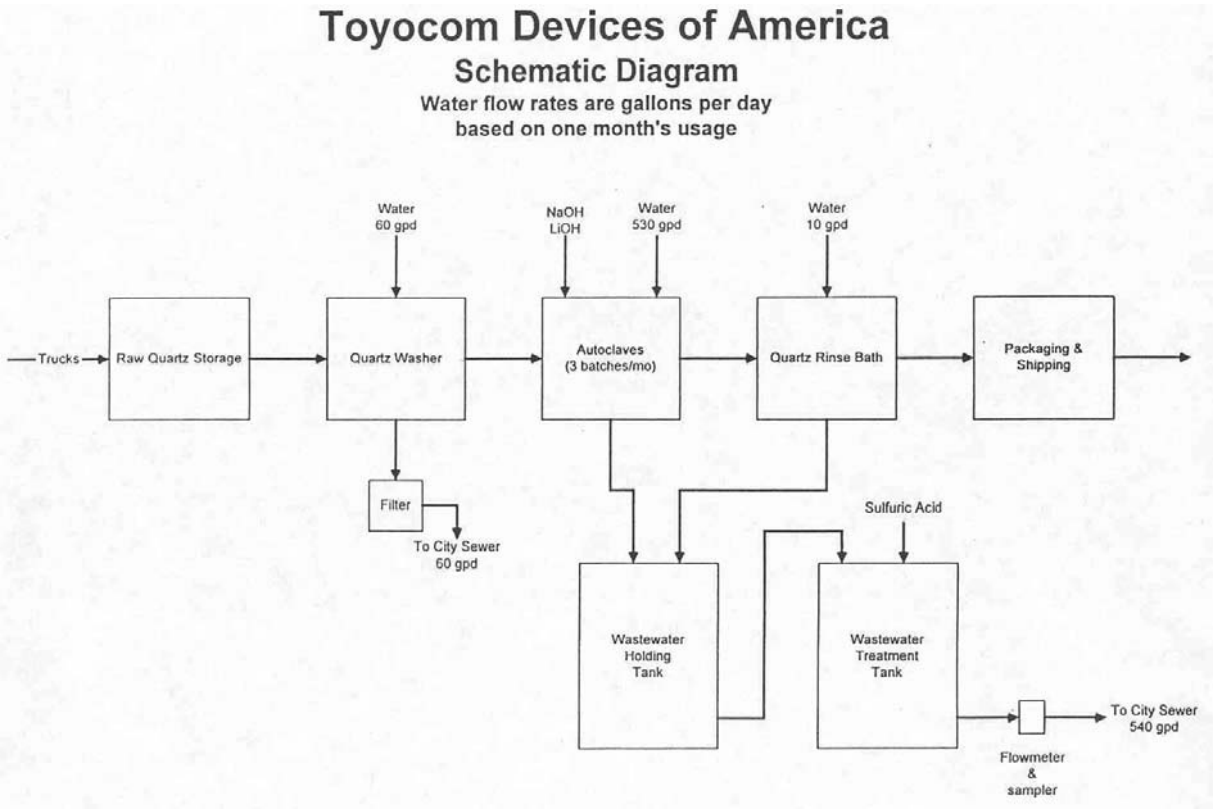
From Toyocom's application: "Toyocom has a 15,000 square foot manufacturing building on an 8.5 acre site at the Mint Farm Industrial Park, Longview, Washington. The facility produces synthetic quartz crystals that are eventually cut and assembled into electronic devices used in telecommunication and other electronic instruments.

The process of growing crystals starts with natural quartz rock that is washed and added to the lower section of an autoclave, the primary process equipment used in the facility. A 4% sodium hydroxide/lithium hydroxide solution is added and seed crystals are placed in the upper section. The autoclave is sealed and heated. Each batch takes approximately three months to grow.

The autoclave is opened and the quartz crystals are harvested, rinsed and inspected. The remaining sodium hydroxide solution is pumped to a mixing tank where it is neutralized and pre-treated before discharge into the city's wastewater system."

TREATMENT PROCESSES

The plant will probably restart with 4 employees, then add two more employees when the additional autoclaves come online. Normal office hours are 8-5 weekdays. During nights and weekends, the plant is monitored via automated notification/alarm systems.



Toyocom has identified two sources of industrial process wastewater in their engineering report, "Engineering Report, Toyocom Devices of America Wastewater System", received by Ecology on March 1, 2002 and approved on April 30, 2002. The first is filtered washwater from the quartz washer, where raw quartz rock is washed in a tumbler prior to introduction into the manufacturing process. Filtered solids are removed and sent to landfill. This wastestream is generated in batches, is estimated at a total of 21,840 gallons per year, and produces about two cubic feet of solids per year.

The second wastestream is spent autoclave solution. After the quartz is harvested, the spent autoclave solution is drained into the wastewater collection tank. This water is then transferred to the treatment tank, normally 1000 gallons per batch. Because of the reactive nature of this highly caustic wastewater, it is diluted with 5000 gallons of city water. The tank agitator mixes the solution, which is monitored for pH, and automatically adjusted by the addition of sulfuric acid until a final pH of 6.0 to 9.0 is achieved. Upon confirmation of the pH by manual testing, the 6000 gallon batch of wastewater is manually released to the sewer system.

PERMIT STATUS

This is a new facility. An application for a permit was submitted to the Department on November 9, 2001 and accepted by the Department on February 6, 2002.

WASTEWATER CHARACTERIZATION

This is a new facility and the discharge has not yet been characterized by laboratory testing. The chemicals used in the manufacturing process are known, as is the pretreatment process. Based on this information, permit limits and monitoring will be assigned. The proposed limits and monitoring are

believed to be protective of the POTW. The permit will contain a requirement to test for a suite of conventional and priority pollutants to better characterize the discharge. This testing will occur within six months after the facility restarts.

The quartz washer is estimated to produce an average of 60 gallons per day, based on operating about twice per month for four hours each. Thus, the autoclaves and washer generate an average flowrate of around 600 gallons of industrial wastewater per day from the facility. However, most of the flow is released in batches of about 6000 gallons per day.

PROPOSED PERMIT LIMITATIONS

State regulations require that limitations set forth in a waste discharge permit must be based on the technology available to treat the pollutants (technology-based) or be based on the effects of the pollutants to the POTW (local limits). Wastewater must be treated using all known, available, and reasonable treatment (AKART) and not interfere with the operation of the POTW.

The more stringent of the local limits-based or technology-based limits are applied to each of the parameters of concern. Each of these types of limits is described in more detail below.

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

All waste discharge permits issued by the Department must specify conditions requiring available and reasonable methods of prevention, control, and treatment of discharges to waters of the state (WAC 173-216-110). Existing federal categorical limitations for this facility are found under 40 CFR Part 469. Specifically, this facility falls under the Pretreatment Standards for New Sources in the Electronic Crystals subcategory (469.28). The following limitations are contained in this section:

Pollutant	Daily Maximum	Monthly Average
Total Toxic Organics	1.37 mg/L	-
Arsenic	2.09 mg/L	0.83 mg/L

A footnote is attached to the arsenic limits, which states that this set of limits only apply to manufacturers of gallium or indium arsenide crystals. Therefore, these limits do not apply to Toyocom and will not be put into the permit.

The federal regulations (40 CFR 469.13(c&d)) have a provision to waive monitoring of TTO. Toyocom uses a small amount of solvents for equipment cleaning, but does not use solvents directly in the manufacturing process, nor in any manner than could reasonably introduce those solvents into their wastewater. Toyocom submitted a Solvent Management Plan (SMP) on June 3, 2002. The cover letter to the SMP officially requested a waiver of TTO monitoring, for the reasons listed in 40 CFR 469. The solvent management plan was accepted by Ecology on June 11, 2002, along with the waiver request. Toyocom understands that the certification statement will need to be included on the monthly reports.

EFFLUENT LIMITATIONS BASED ON LOCAL LIMITS

In order to protect the Cowlitz Water Pollution Control Plant from pass-through, interference, concentrations of toxic chemicals that would impair beneficial or designated uses of sludge, or potentially hazardous exposure levels, limitations for certain parameters are necessary. These limitations are based on proposed local limits. Applicable limits for this discharge include the following:

pH, standard units	5.5-9.0
Total Suspended Solids	250 mg/L
Biochemical Oxygen Demand	250 mg/L

Ecology does not believe that Toyocom's autoclave wastewater should contain significant amounts of BOD or TSS. Therefore, limits will not be imposed at this time, but monitoring for these parameters will be included in the permit. Based on the results of the periodic monitoring and/or priority pollutants scan results, additional limits may be imposed.

MONITORING REQUIREMENTS

Monitoring, recording, and reporting are specified to verify that the treatment process is functioning correctly, and that effluent limitations are being achieved (WAC 173-216-110). Additional monitoring of suspended solids, biochemical oxygen demand, and oil and grease, will further characterize the discharge.

The monitoring schedule is detailed in the proposed permit under Condition S2. Specified monitoring frequencies take into account the quantity of the discharge, the treatment method, significance of pollutants, and cost of monitoring.

Monitoring for priority pollutants is being required to further characterize the effluent. These pollutant(s) could have a significant impact on the receiving POTW.

OTHER PERMIT CONDITIONS

REPORTING AND RECORDKEEPING

The conditions of S3 are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 273-216-110 and 40 CFR 403.12 (e),(g), and (h)).

OPERATIONS AND MAINTENANCE

The proposed permit contains condition S.5. as authorized under Chapter 173-240-150 WAC and Chapter 173-216-110 WAC. It is included to ensure proper operation and regular maintenance of equipment, and to ensure that adequate safeguards are taken so that constructed facilities are used to their optimum potential in terms of pollutant capture and treatment.

PROHIBITED DISCHARGES

Certain pollutants are prohibited from being discharged to the POTW. These include substances which cause pass-through or interference, pollutants which may cause damage to the POTW or harm to the POTW workers (Chapter 173-216 WAC) and the discharge of designated dangerous wastes not authorized by this permit (Chapter 173-303 WAC).

DILUTION PROHIBITED

The Permittee is prohibited from diluting its effluent as a partial or complete substitute for adequate treatment to achieve compliance with permit limitations. This prohibition does not include the initial dilution of the caustic autoclave wastewater, as described in the approved engineering report.

NON-ROUTINE AND UNANTICIPATED DISCHARGES

Occasionally, this facility may generate wastewater which is not characterized in their permit application because it is not a routine discharge and was not anticipated at the time of application. These typically are waters used to pressure test storage tanks or fire water systems or leaks from drinking water systems. These are typically clean waste waters but may be contaminated with pollutants. The permit contains an authorization for non-routine and unanticipated discharges. The permit requires a characterization of these waste waters for pollutants and examination of the opportunities for reuse. Depending on the nature and extent of pollutants in this wastewater and opportunities for reuse, Ecology may authorize a direct discharge via the process wastewater outfall or through a stormwater outfall for clean water, require the wastewater to be placed through the facilities wastewater treatment process or require the water to be reused.

GENERAL CONDITIONS

General Conditions are based directly on state laws and regulations and have been standardized for all industrial waste discharge to POTW permits issued by the Department.

Condition G1 requires responsible officials or their designated representatives to sign submittals to the Department. Condition G2 requires the Permittee to allow the Department to access the treatment system, production facility, and records related to the permit. Condition G3 specifies conditions for modifying, suspending or terminating the permit. Condition G4 requires the Permittee to apply to the Department prior to increasing or varying the discharge from the levels stated in the permit application. Condition G5 requires the Permittee to construct, modify, and operate the permitted facility in accordance with approved engineering documents. Condition G6 prohibits the Permittee from using the permit as a basis for violating any laws, statutes or regulations. Conditions G7 and G8 relate to permit renewal and transfer. Condition G9 requires the Permittee to control production or wastewater discharge in order to maintain compliance with the permit. Condition G10 prohibits the reintroduction of removed pollutants into the effluent stream for discharge. Condition G11 requires the payment of permit fees. Condition G12 describes the penalties for violating permit conditions.

PUBLIC NOTIFICATION OF NONCOMPLIANCE

A list of all industrial users which were in significant noncompliance with Pretreatment Standards or Requirements during any of the previous four quarters may be annually published by the Department in a local newspaper. Accordingly, the Permittee is apprised that noncompliance with this permit may result in publication of the noncompliance.

RECOMMENDATION FOR PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control toxics. The Department proposes that the permit be issued for 5 years. However, to coordinate with the five year cycle for all permits in the Lower Columbia Basin, this permit will expire after about four years, at the end of June 2006. Upon renewal, it is anticipated that the next permit for Toyocom will be issued for a full five years.

APPENDICES

APPENDIX A—PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to reissue a permit to the applicant listed on page 1 of this fact sheet. The permit contains conditions and effluent limitations which are described in the rest of this fact sheet.

Public notice of application was published on August 20, 2001 in the Longview Daily News to inform the public that an application had been submitted and to invite comment on the reissuance of this permit.

The Department will publish a Public Notice of Draft (PNOD) in June in the Longview Daily News to inform the public that a draft permit and fact sheet are available for review. Interested persons are invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below. Written comments should be mailed to:

Water Quality Permit Coordinator
Department of Ecology
Southwest Regional Office
P.O. Box 47775
Olympia, WA 98504-7775

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the thirty (30) day comment period to the address above. The request for a hearing shall indicate the interest of the party and reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-216-100). Public notice regarding any hearing will be circulated at least thirty (30) days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing.

Comments should reference specific text followed by proposed modification or concern when possible. Comments may address technical issues, accuracy and completeness of information, the scope of the facility's proposed coverage, adequacy of environmental protection, permit conditions, or any other concern that would result from issuance of this permit.

The Department will consider all comments received within thirty (30) days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, (360) 407-6286, or by writing to the address listed above.

This permit was written by Don Reif, Environmental Engineer.

APPENDIX B—GLOSSARY

Average Monthly Discharge Limitation—The average of the measured values obtained over a calendar month's time.

Best Management Practices (BMPs)--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD_5--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD_5 is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass—The intentional diversion of waste streams from any portion of the collection or treatment facility.

Categorical Pretreatment Standards—National pretreatment standards specifying quantities or concentrations of pollutants or pollutant properties which may be discharged to a POTW by existing or new industrial users in specific industrial subcategories.

Composite Sample—A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite"(collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots.

Construction Activity—Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

Continuous Monitoring –Uninterrupted, unless otherwise noted in the permit.

Engineering Report—A document, signed by a professional licensed engineer, which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Grab Sample—A single sample or measurement taken at a specific time or over as short period of time as is feasible.

Industrial User—A discharger of wastewater to the sanitary sewer which is not sanitary wastewater or is not equivalent to sanitary wastewater in character.

Industrial Wastewater—Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations

such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

Local Limits—Specific prohibitions or limits on pollutants or pollutant parameters developed by a POTW.

Maximum Daily Discharge Limitation—The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Method Detection Level (MDL)--The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.

Pass-through— A discharge which exits the POTW into waters of the-State in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation), or which is a cause of a violation of State water quality standards.

pH—The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

Potential Significant Industrial User--A potential significant industrial user is defined as an Industrial User which does not meet the criteria for a Significant Industrial User, but which discharges wastewater meeting one or more of the following criteria:

a. Exceeds 0.5 % of treatment plant design capacity criteria and discharges <25,000 gallons per day or;

b. Is a member of a group of similar industrial users which, taken together, have the potential to cause pass through or interference at the POTW (e.g. facilities which develop photographic film or paper, and car washes).

The Department may determine that a discharger initially classified as a potential significant industrial user should be managed as a significant industrial user.

Quantitation Level (QL)-- A calculated value five times the MDL (method detection level).

Significant Industrial User (SIU)--

1) All industrial users subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR Chapter I, Subchapter N and;

2) Any other industrial user that: discharges an average of 25,000 gallons per day or more of process wastewater to the POTW (excluding sanitary, noncontact cooling, and boiler blow-down wastewater); contributes a process wastestream that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated as such by the Control Authority* on the basis that the industrial user has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement (in accordance with 40 CFR 403.8(f)(6)).

Upon finding that the industrial user meeting the criteria in paragraph 2, above, has no reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement, the Control Authority* may at any time, on its own initiative or in response to a petition received from an industrial user or POTW, and in accordance with 40 CFR 403.8(f)(6), determine that such industrial user is not a significant industrial user.

*The term "Control Authority" refers to the Washington State Department of Ecology in the case of non-delegated POTWs or to the POTW in the case of delegated POTWs.

Slug Discharge—Any discharge of a non-routine, episodic nature, including but not limited to an accidental spill or a non-customary batch discharge to the POTW. This may include any pollutant released at a flow rate which may cause interference with the POTW.

State Waters—Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater—That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Technology-based Effluent Limit—A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Suspended Solids (TSS)--Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

APPENDIX C—TECHNICAL CALCULATIONS

Technical calculations are included in the engineering report.

APPENDIX D—RESPONSE TO COMMENTS

No comments were received during the public comment period.